

Application No. 10/674,152
Amendment dated May 7, 2007
Reply to Office Action of March 14, 2007

Docket No.: 013436.0268PTUS

REMARKS

Claims 1 – 4 are pending in this application. Claims 2 and 3 have been amended to correct grammatical errors.

In an Office Action mailed 14 March 2007, claims 1 and 2 have been rejected under 35 USC §102(e) as being anticipated by U.S. Patent No. 7,051,104 B1 issued to Cheng. Also, claims 3 and 4 have been rejected under 35 USC §103(a) as unpatentable over the Cheng Patent in view of U.S. Patent No. 5,506,839 issued to Hatta, noting with respect thereto:

Consider claim 1, Cheng clearly show and disclose a (data communication) system operating in ISDN data link layer protocols Q.921 (LAP-D) and Q.922 (LAP-F) that maintains active (assuming link layer is still alive) connection between two terminals/access nodes and that all switched virtual circuits (SVC) are still established during a down or re-initialization, which may include a software reset (column 5, lines 39-55). Cheng further discloses the exchange of ITU Q.921 and Q.922 request signals (e.g. TEI, SAMBF, AWAITING_UA/DM, DL-ESTABLISH, DR-RELEASE, etc.) between a data terminal equipment (DCE) (sic) [DTE] and a data communication equipment (DCE) to maintain a predetermined active data call connection state (column 5, lines 26-55 and column 6, lines 25-30).

Applicants have reviewed the cited references and the Examiner's stated grounds of rejection, and present the following remarks in support of patentability.

The Cheng Patent discloses a system and method for extending and modifying the ITU Q.922 LAPF disconnect logic to remedy or alleviate unsynchronized virtual circuit establishment instances between a first device and a second device. The method generally includes transmitting a disconnect request message to the first device in response to a data link establish request and transmitting a request for connection to establish link message to the second device upon one of expiration of an awaiting-response timer, receiving a disconnect mode message from the second device, and receiving an acknowledgement message from the second device.

As noted in Cheng, column 1, lines 56 – 65:

... if either end of an LAPF link between a user device and a peer device providing a connection to a Frame Relay network goes down and comes back up, it is assured that both ends of the link understand that all virtual circuits have been torn down or released. The extension provided by the present invention may be implemented at either or both ends of the link. Protection against unsynchronized virtual circuit

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establishment instances is provided if the end that goes down and comes back up is equipped with the extension.

This is explained in more detail in column 4, lines 35 – 38, and the following description:

Recommendation Q.922 allows for and does not resolve the problematic instances of unsynchronized SVC establishment as described below. In particular, there may be circumstances when an LAPF link to a device goes down. The LAPF may go down when the device brings down the LAPF link, such as when there is an internal system error or a system reload, or when the device determines that the LAPF link is down, such as in response to the physical line being down.

Once the physical link goes down and then comes back up again (see Fig. 6), the system loses the synchronization between the virtual circuits (SVC) that are implemented at either end of the link. It is this lack of synchronization that the Cheng Patent addresses.

In contrast, Applicants' data link layer maintenance system prevents the data link from going down by forcing the terminal equipment into a predetermined active data call connection state. Applicants' data link layer maintenance system executes in the Q.921 protocol server of the serving ISDN Access Node and maintains the data link layer active in the ISDN-based Terminal Equipment and the Q.921 protocol server of the serving ISDN Access Node during the execution of a software reset process, and thereby prevents the data link from going down. This is accomplished by the Q.921 protocol server of the serving ISDN Access Node software storing the data communications connection data in a persistent table that survives the software reset operation. A predetermined set of control signals is then exchanged between the Q.921 protocol server of the serving ISDN Access Node and the ISDN-based Terminal Equipment in response to the initiation of a software reset process to execute standard signaling processes of the LAP-D protocol to force the Terminal Equipment and the Q.921 protocol server of the serving ISDN Access Node into a predetermined stable state.

Thus, Applicants' data link layer maintenance system addresses an entirely different problem than the cited Cheng Patent. Applicants' system prevents the data link from going down by forcing the terminal equipment into a predetermined active data call connection state, while the Cheng Patent addresses remediation of the switched virtual circuits (SVC) after the data link has gone down and synchronization of these switched virtual circuits is lost.

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Applicants have amended independent claim 1 to more clearly state this distinction and believe that claims 1 and 2 are allowable under 35 USC §102(c) over the cited Cheng Patent.

The Examiner also rejected claims 3 and 4 under 35 USC §103(a) as unpatentable over the Cheng Patent in view of U.S. Patent No. 5,506,839 issued to Hatta.

The Hatta Patent discloses a congestion control method adapted to a communications system having a network, a terminal, and a terminal adapter which is provided between the network and the terminal and interchanges a first frame format handled by the network and a second frame format handled by the terminal; the terminal adapter receives a signal sent in the first frame format via the network and detects whether or not the signal includes congestion notification information indicating occurrence of a congestion in the communications system. The terminal adapter then sends a signal in the second frame format including first notification information to the terminal. The terminal adapter then performs a predetermined control process for recovery from the congestion when the terminal receives the signal in the second frame format.

Applicants believe that claims 3 and 4 are allowable under 35 USC §103(a) over the cited Cheng Patent and Hatta Patent, since these claims depend on allowable base claims.

In view of the above amendments and remarks, Applicants believe the pending application is in condition for allowance. Applicants believe no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 50-1848, under Order No. 013436.0268PTUS from which the undersigned is authorized to draw.

Respectfully submitted,
PATTON BOGGS LLP

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